

1,013,137

UNITED STATES PATENT OFFICE.

BERNARD DIAMAND, OF IDAWEICHE, OBERSCHLESIEIN, GERMANY.

PROCESS OF TIGHTENING CASKS, BARRELS, OR THE LIKE.

1,013,137.

Specification of Letters Patent.

Patented Jan. 2, 1912.

No Drawing.

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To all whom it may concern:

Be it known that I, BERNARD DIAMAND, doctor of philosophy, a citizen of Austria, residing at Idaweiche, Oberschlesien, Germany, have invented new and useful Improvements in Processes of Tightening Casks, Barrels, or the Like, of which the following is a specification.

Casks, barrels or the like composed of several parts (except those made of iron) for shipping or storing petrol or similar liquids are commonly coated on the inner surface with a tightening medium in order to prevent leakage. The casks or the like are for this purpose partially filled with a hot solution of the tightening medium. The casks are then closed and rolled so that the whole inner surface is successively inundated by the solution. Owing to the rise of temperature of the inclosed air and owing to the generation of steam a considerable pressure is produced in the interior of the cask, whereby the tightening medium is forcibly pressed into the pores and fissures of the cask walls. After a certain time the bung hole is opened and the excess of the tightening medium is allowed to run out for further use. After being cooled down, the cask is ready for the reception of petrol, oil or the like.

Common glue is usually employed as tightening material, but this substance has besides many advantages the serious drawback that it is liable to become moldy, especially at summertime, so that the casks cannot be stored up but must be used immediately after the tightening operation has taken place. Moreover common glue is most expensive and an equivalent of it has been long looked for. I have discovered that common glue may be advantageously replaced by the waste liquor resulting from the manufacture of cellulose from wood. In the manufacture of cellulose wood is boiled with a solution of caustic soda or calcium sulfite, whereby the agglutinant constituents of the wood are dissolved. The resulting lye is commonly evaporated or reduced to dryness and burned. I have found that this lye has all the advantages of common glue but has not the drawbacks mentioned above. It is by no means soluble in nor is influenced by petrol or the like, whether the lye may be in a dry state or dissolved in any quantity of water. It adheres sufficiently to wood or the like and prevents

leakage of the casks perfectly and permanently. Of especial value is its contents of tannic acid which prevents it from becoming moldy.

The cellulose lye may be used either alone or in combination with other substances such as glue, molasses, starch, water-glass and the like. With respect to the use of water-glass, it is to be noted that sulfite cellulose lye is of acid reaction and therefore would decompose waterglass solution into silicic acid and an alkali salt. Therefore it must be previously neutralized. It is, however, also possible to employ the sulfite lye in its acid state, if the casks are first coated with water-glass solution and thereafter with the acid sulfite lye. In this case, silicic acid is separated and deposited in the pores of the wood or in the fissures of the cask walls and the outer tightening layer becomes more compact.

The density of the cellulose lye to be employed depends on the material of the casks to be tightened, that is to say the density must be the greater the greater is the porosity of the wood or the like material. As a rule, the lye when cooled down should have the consistency of thick syrup. Good results have been obtained by using a cellulose lye having from 25 to 35° Be.

I claim:

1. The process of tightening or luting casks, barrels or the like, which consists in coating the interior surface with water-glass and waste cellulose lye.
2. The process of tightening or luting casks or barrels or the like, consisting in coating the interior surface of the said casks with water-glass and then coating the surface thus treated with cellulose lye.
3. The process of tightening or luting casks or barrels or the like, which consists in neutralizing the waste liquor resulting from the manufacture of sulfite-cellulose, adding water-glass thereto, and coating the interior surface of the said casks with the resulting compound, substantially as described.
4. The process of tightening or luting casks or barrels or the like, which consists in coating the interior surface of the said casks with water-glass and the waste liquor resulting from the manufacture of cellulose from wood, substantially as described.
5. The process of tightening or luting casks or barrels or the like, which consists in

neutralizing the waste liquor resulting from
the manufacture of sulfite-cellulose, adding
water-glass and glue thereto, and coating
the interior surface of the said casks with
5 the resulting compound, substantially as de-
scribed.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

BERNARD DIAMAND.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.